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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,318	08/31/2001	Tore Nauta	NL 000483	2147

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EXAMINER

STULTZ, JESSICA T

ART UNIT	PAPER NUMBER
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2873

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/944,318

Applicant(s)

NAUTA ET AL.

Examiner

Jessica T. Stultz

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006 and 02 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,8-13,16,19 and 20 is/are rejected.
- 7) ☒ Claim(s) 2-4,6,7,14,15,17,18 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Examiner's Comments

For applicant's information, the petition filed May 1, 2006 requesting to withdraw the restriction requirement mailed February 24, 2005 has been granted and a notification of this decision will be mailed to the applicant. Therefore the application is being reopened and a new office action has been issued to address previously withdrawn claims 13-20, as shown below.

Claim Objections

Claim 18 is objected to because of the following informalities in claim 18, line 1, "The device of claim 13" should be "The device of claim 14", since there is no mention of a selectively switchable light switch in dependent claim 13 (this being the assumed meaning for purposes of examination). Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 8-9, 11-13, 16, and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Jelley et al US 5,377,027, herein referred to as Jelley et al'027.

Regarding claim 1, Jelley et al '027 discloses a display device comprising a display panel having a first light-transmissive substrate provided with electrodes at the area of pixels arranged in rows and columns (Column 2, lines 22-68, wherein the first transparent substrate is "24" with electrodes "30" corresponding to pixels "36", Figures 1-2), a second light-transmissive substrate

Art Unit: 2873

(Column 2, lines 22-68, wherein the second transparent substrate is "22", Figures 1-2), and electro-optic material (Column 2, lines 22-68, wherein the electro-optic material is liquid crystal material "20", Figures 1-2) between the two substrates (Figures 1-2), and an illumination system situated on the side of the second substrate remote from the electro-optical material, the illumination system including an optical waveguide of optically transparent material having an exit face facing the display panel (Column 3, lines 25-41, wherein the illumination device is "14" including transparent polymeric waveguide "40" with an exit face "48", Figures 1-2) and wherein the waveguide is adapted for selectively coupling out light (Column 3, line 25-Column 4, line 55, wherein the illumination for waveguide "40" is provided by individually selected emission of diodes "52", "54", and "56", which provide light to respective output sites "48" and therefore couple the light from the diodes through the waveguide, Figures 1-2) for a group of rows of pixels or a group of columns of pixels (Column 3, line 25-Column 4, line 55, wherein the waveguide "40" is coupled to pixels "36" and selectively illuminates rows and columns of the pixels "36" from respective sites "48", Figures 1-2) and for coupling in light in a direction which is substantially parallel to the exit face (Column 3, line 25-Column 4, line 55, wherein the light "58" is coupled to waveguide "40" through the edge "50" which is parallel to the exit face "48", as shown in Figures 1-2).

Regarding claim 5, Jelley et al '027 further discloses that the illumination system includes sub-segments (Column 5, line 51-Column 6, line 31, wherein the waveguide "102" is broken down into sub-segments as shown in Figure 4) and a backlight with an entrance face for the sub-segments (Column 1, lines 40-57, wherein the liquid crystal is illuminated by a backlight, and Column 5, line 51-Column 6, line 31, wherein the waveguide "102" receives light

Art Unit: 2873

from a backside illuminator "100", Figures 1-2 and 4), while light from the backlight can be coupled into the sub-segments (Shown in Figure 4).

Regarding claim 8, Jelley et al '027 further discloses that the switch includes an electro-optical switching device (Column 3, lines 1-24 and Column 4, lines 31-54, wherein the pixels are selectively adjusted by selective electrical potentials, Figures 1-2) with an electro-optic material between the substrates (Column 2, lines 22-68, wherein the electro-optic material is liquid crystal material "20", Figures 1-2), wherein at least one substrate has strip-shaped electrodes on the side of the electro-optic material (Figure 1, wherein the electrodes are "30", Figures 1-2).

Regarding claim 9, Jelley et al '027 further discloses that the illumination system includes a backlight having an entrance face for light into the optical waveguide to be coupled into an entrance face extending transversely to the exit face (Column 1, lines 40-57, wherein the liquid crystal is illuminated by a backlight, and Column 5, line 51-Column 6, line 31, wherein the waveguide "102" receives light from a backside illuminator "100", Figures 1-2 and 4), wherein parts of the backlight are selectively switchable between an on-state, having high intensity, and an off-state (Column 3, lines 1-24 and Column 4, lines 31-54, wherein the pixels are selectively adjusted by selective electrical potentials, Figures 1-2).

Regarding claim 11, Jelley et al '027 further discloses that the display unit includes a drive unit capable of presenting signals to data and column electrodes for the purpose of writing pixels, and selectively activating a part of the illumination system associated with the group of rows of pixels (Column 3, lines 1-24 and Column 4, lines 31-54, wherein the pixels are selectively adjusted by selective electrical potentials to the electrodes "30", Figures 1-2).

Regarding claim 12, Jelley et al '027 discloses a display device as shown above, but does not specifically disclose that the drive unit introduces a delay between the presentation of signals to the data and column electrodes and the selective activation of the part of the illumination system associated with the group of rows of pixels. However, it is inherent that a delay would be introduced, this being reasonably based upon the fact that the electrical signals must pass through wires to the electrodes and therefore a delay would occur between the initiation of the signal and the activation of the illumination system.

Regarding claim 13, Jelley et al '027 discloses an illumination system comprising an optical waveguide of optically transparent material having an exit face (Column 3, lines 25-41, wherein the illumination device is "14" including transparent polymeric waveguide "40" with an exit face "48", Figures 1-2) and means for coupling light on at least one entrance face in a direction parallel to the exit face (Column 3, line 25-Column 4, line 55, wherein the light "58" is coupled to waveguide "40" through the edge "50" which is parallel to the exit face "48", as shown in Figures 1-2), wherein the optical waveguide is provided with means for selectively coupling in light for a part of the exit face (Column 3, line 25-Column 4, line 55, wherein the illumination for waveguide "40" is provided by individually selected emission of diodes "52", "54", and "56", which provide light to respective output sites "48" and therefore coupling the light from the diodes through the waveguide to selected parts of the exit face "48", Figures 1-2).

Regarding claim 16, Jelley et al '027 further discloses that the illumination system includes sub-segments (Column 5, line 51-Column 6, line 31, wherein the waveguide "102" is broken down into sub-segments as shown in Figure 4) and at least one backlight with an entrance face for each sub-segment (Column 1, lines 40-57, wherein the liquid crystal is illuminated by a

Art Unit: 2873

backlight, and Column 5, line 51-Column 6, line 31, wherein the waveguide "102" receives light from a backside illuminator "100", Figures 1-2 and 4), while light from the backlight can be coupled into the sub-segments (Shown in Figure 4).

Regarding claim 19, Jelley et al '027 further discloses that the switch includes an electro-optical switching device (Column 3, lines 1-24 and Column 4, lines 31-54, wherein the pixels are selectively adjusted by selective electrical potentials, Figures 1-2) with an electro-optic material between two substrates (Column 2, lines 22-68, wherein the electro-optic material is liquid crystal material "20" is located between substrates are "22" and "24", Figures 1-2), wherein at least one substrate has strip-shaped electrodes on the side of the electro-optic material (Figure 1, wherein the electrodes are "30", Figures 1-2).

Regarding claim 20, Jelley et al '027 further discloses that the illumination system includes a backlight having an entrance face for light at the area of the optical waveguide, while light from the backlight can be coupled in along an entrance face extending transversely to the exit face (Column 1, lines 40-57, wherein the liquid crystal is illuminated by a backlight, and Column 5, line 51-Column 6, line 31, wherein the waveguide "102" receives light from a backside illuminator "100", Figures 1-2 and 4), wherein parts of the backlight are selectively switchable between an on-state, having high intensity, and an off-state (Column 3, lines 1-24 and Column 4, lines 31-54, wherein the pixels are selectively adjusted by selective electrical potentials, Figures 1-2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2873

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jelley et al '027 in view of Deacon et al US 6,325,553, herein referred to as Deacon et al '553.

Regarding claim 10, Jelley et al '027 discloses a display device as shown above, but does not specifically disclose that the backlight comprises a prismatic element. Deacon et al '553 teaches of a laser array to illuminate a waveguide for a display wherein prismatic structures are used to increase the efficiency of the connection between the laser diode array and the waveguide (Column 20, lines 28-53). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made for the display device of Jelley et al '027 to further include the backlight comprising a prismatic element since Deacon et al '553 teaches of laser array to illuminate a waveguide for a display wherein prismatic structures are used to increase the efficiency of the connection between the laser diode array and the waveguide.

Response to Arguments

Appellant's argument against the 102 (b) rejection of independent claim 1 is that the optical waveguide of the Jelley et al '027 reference is not adapted for selectively coupling light to the display panel for a group of rows of pixel, or a group of columns of pixels. The examiner disagrees since Jelly et al '027 reference discloses selectively addressing groups of pixels by selective emission of laser diodes and selectively addressing pixels through specific output sites (Column 3, line 25-Column 4, line 55). The examiner asserts that the Jelley et al '027 reference discloses a waveguide adapted for selectively coupling out light (Column 3, line 25-Column 4,

Art Unit: 2873

line 55, wherein the illumination for waveguide "40" is provided by individually selected emission of diodes "52", "54", and "56", which provide light to respective "48", Figures 1-2) for a group of rows of pixels or a group of columns of pixels (Column 3, line 25-Column 4, line 55, wherein the waveguide "40" is coupled to pixels "36" and selectively illuminates rows and columns of the pixels "36" from respective sites "48", Figures 1-2). Therefore the Jelley et al '027 reference discloses selective coupling of light to the display panel for a group of pixels by selective emission of the laser diodes and selectively addressing pixels through specific output sites.

Appellant's argument against the 103 (a) rejection of dependent claim 10 over Jelly et al '027 in view of Deacon et al '553 is considered mute since there is no argument regarding the combination of Jelly et al '027 and Deacon et al '553 to show the use of a prismatic element in the system. Therefore the 103 (a) rejection of claim 10 over Jelly et al '027 in view of Deacon et al '553 remains as shown above.

Appellant's argument against the 35 U.S.C. 102 (b) rejection, with respect to dependent claims 2-4 (and therefore dependent claim 22) and claim 6 (and therefore dependent claim 7), is that the Jelley et al '027 reference does not disclose a selectively switchable light switch that is situated between the backlight and an entrance face of the waveguide. This argument has been fully considered and found persuasive. The Examiner's basis for allowability of dependent claims 2-4, 6-7, and 22 can be found below. The rejection of claims 2-4, 6-7, and 22 has been withdrawn.

Allowable Subject Matter

Claims 2-4, 6-7, 14-15, 17-18, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowable subject matter: none of the prior art alone or in combination disclose or teach of the claimed combination of limitations to warrant a rejection under 35 USC 102 or 103.

Specifically regarding claims 2-4 and 22, none of the prior art alone or in combination disclose or teach of a display device having first and second light-transmissive substrates, an illumination system including a backlight, and an optical waveguide adapted for selectively coupling out light to the display panel for a group of rows of pixels or a group of columns of pixels as disclosed, specifically wherein the illumination system includes a selectively switchable light switch situated between the backlight and the entrance face of the waveguide.

Specifically regarding claims 6-7, none of the prior art alone or in combination disclose or teach of a display device having first and second light-transmissive substrates, an illumination system including a backlight, and an optical waveguide adapted for selectively coupling out light to the display panel for a group of rows of pixels or a group of columns of pixels as disclosed, specifically wherein the illumination system includes selectively switchable light switches situated between the backlight and segments of the optical waveguide.

Specifically regarding claims 14-15 and 18, none of the prior art alone or in combination disclose or teach of an illumination system including a backlight and an optical waveguide adapted for selectively coupling in light for part of an exit face of the waveguide as disclosed,

Art Unit: 2873

specifically wherein the illumination system includes a selectively switchable light switch situated between the backlight and the entrance face of the waveguide.

Specifically regarding claim 17, none of the prior art alone or in combination disclose or teach of an illumination system including a backlight and an optical waveguide adapted for selectively coupling in light for part of an exit face of the waveguide as disclosed, specifically wherein the illumination system includes selectively switchable light switches situated between the backlight and segments of the optical waveguide.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica T. Stultz whose telephone number is (571) 272-2339. The examiner can normally be reached on M-F 8-4:30.

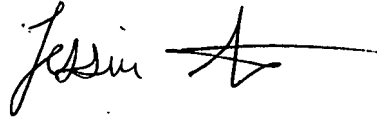
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 09/944,318

Page 11

Art Unit: 2873

A handwritten signature in black ink, appearing to read "Jessica T Stultz", followed by a long horizontal line.

Jessica T Stultz
Examiner
Art Unit 2873
June 6, 2007